

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A device manufacturing apparatus comprising:
a discharge head for discharging a droplet containing a functional material;
a stage for supporting a substrate on which said droplet is discharged, and which is capable of moving relative to said discharge head;
a carrier for carrying said substrate;
a detector for detecting a discharge condition of said droplet which is discharged from a discharge nozzle formed in said discharge head;
a driving device for moving said discharge head with respect to said detector;
and
a controller for executing a detection operation by said detector during loading and unloading operations of said substrate, said loading and unloading operations being made by replacing a first substrate being the substrate currently supported on the stage with a second substrate being another substrate currently not supported on the stage,
wherein
said detector and said stage are provided at different locations;
said detector includes a light emitter for emitting a detection light, and a receiver for receiving said detection light emitted from said light emitter;
said receiver determines whether said liquid droplet is being discharged from said discharge nozzle, based on changes in the intensity of said detection light received

by said receiver due to said liquid droplet passing through the optical path of said detection light; and

 said controller performs calibration of said receiver immediately before execution of a nozzle detection operation so as to consider a current condition of said receiver and current influences on said receiver of circumstances surrounding said receiver, said calibration including resetting of a gain data at present of said receiver.

2-3. (Cancelled).

4. (Original) A device manufacturing apparatus according to claim 1, further comprising

 a recovery unit for performing a recovery operation of said discharge nozzle.

5. (Original) A device manufacturing apparatus according to claim 4, wherein said controller performs said recovery operation corresponding to detection results of said detector, and reexecutes detection a predetermined number of times.

6. (Original) A device manufacturing apparatus according to claim 1, further comprising

 a display device for displaying detection results of said detector, and an error based on the detection results.

7. (Cancelled)

8. (Original) A device manufacturing apparatus according to claim 1, wherein said discharge head is two or more.

9. (Original) A device manufacturing apparatus according to claim 1, wherein said device is at least one of; a liquid crystal element, an organic electroluminescent element, a plasma display element, an electron emission element, an optical element and a conductive film element.

10. (Currently Amended) A device manufacturing method comprising:
a step of discharging a droplet containing a functional material onto a substrate by means of a discharge nozzle in a discharge head;
a carrying step of loading and unloading said substrate;
a step of moving said discharge nozzle from a first position at which said step of discharging said droplet is carried out, to a second position at which an operation for detecting a discharge condition of said droplet which is discharged from said discharge nozzle is carried out, during said carrying step; and
a detection step of detecting said discharge condition, during said carrying step in which a first substrate being the substrate currently positioned at the first position is replaced with a second substrate being another substrate currently not positioned on the first position, wherein
said detection step of detecting said discharge condition includes the steps of emitting detection light towards a receiver, and determining whether said liquid droplet

is being discharged from said discharge nozzle, based on changes in the intensity of said detection light received by said receiver due to said liquid droplet passing through the optical path of said detection light, and wherein

calibration of said receiver is performed immediately before execution of a nozzle detection operation so as to consider a current condition of said receiver and current influences on said receiver of circumstances surrounding said receiver, said calibration including resetting of a gain data at present of said receiver.

11-14. (Cancelled)

15. (Currently Amended) A device manufacturing method comprising:
loading a first substrate onto a stage;
discharging droplets onto the first substrate from a nozzle in a discharge head;
unloading said first substrate from the stage and treating the droplets to form a structure on the substrate; and
during the loading of a second substrate not positioned on the stage, onto the stage or unloading of the first substrate positioned on the stage, testing the discharge head by passing droplets therefrom through a light beam, wherein
said testing of the discharge head includes the steps of:
emitting detection light towards a receiver; and
determining whether said droplets are being discharged from said nozzle, based on changes in the intensity of said light beam received by said receiver due to said droplets passing through the optical path of said light beam, and wherein

calibration of said receiver is performed immediately before execution of a nozzle detection operation so as to consider a current condition of said receiver and current influences on said receiver of circumstances surrounding said receiver, said calibration including resetting of a gain data at present of said receiver.